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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/985,836	11/06/2001	Kiyoshi Tateishi	041465-5126	4513

9629 7590 04/08/2004
MORGAN LEWIS & BOCKIUS LLP
1111 PENNSYLVANIA AVENUE NW
WASHINGTON, DC 20004

EXAMINER

ORTIZ CRIADO, JORGE L

ART UNIT	PAPER NUMBER
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2655

DATE MAILED: 04/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/985,836

Applicant(s)

TATEISHI, KIYOSHI

Examiner

Jorge L Ortiz-Criado

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 November 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 November 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ito et al. U.S. Patent No. 5,881,032 in view of Horimai et al. U.S. Patent No. 6,128,272.

Regarding claims 1 and 2, Ito et al. discloses an optical recording medium having a plurality of recording layers of a double-spiral structure in which information is recorded on groove tracks (See Abstract; col. 2, lines 16-43; col. 8, lines 55-64; Figs. 1-3; 12),

wherein a spiral of a first recording layer of said recording layers is in a forward direction, a spiral of a second recording layer of said recording layers is in a backward direction (See Abstract, col. 8, lines 39-66; col. 10-lines 28-49; Figs. 1,2,34,10,12) , and

first information is recorded on one of a land track and a groove track of said first recording layer in the direction from an inner periphery toward an outer periphery of said optical recording medium (See Abstract; col. 2, lines 16-43; col. 8, line 55 to col. 10 line11; Figs. 1A,2,3; 12)(See col. 10, lines 43-49; "vice versa"), and

second information subsequent to said first information is recorded on one of a land track and a groove track of said second recording layer in the direction from the outer periphery toward the inner periphery of said optical recording medium (See Abstract; col. 2, lines 16-43; col. 8, line 55 to col. 10 line 11; Figs. 1B, 2, 3; 12) (See col. 10, lines 43-49; "vice versa").

Ito et al. teaches having a double-spiral structure with lands and grooves (groove tracks with spaces between "lands"), but fails to disclose which information is recorded on both of land and groove tracks (See col. 2, lines 16-43; col. Fig. 1, 13)

However, this feature is well known in the art as evidenced by Horimai et al., which discloses a format of a recording medium for increasing capacity including a double-spiral tracks in which information is recorded on both land tracks and groove tracks (See Abstract; col. 16, lines 7-15; col. 20, lines 16-43; Figs. 11, 17)

It would have been obvious to one with ordinary skill in the art at the time of the invention to form a double-spiral recording information in which information is recorded on both land tracks and groove tracks, in order to increase the recording capacity and further performing a continuous tracking operation at the time of recording/reproduction of the lands tracks and/or the grooves tracks, as suggested by Horimai et al.

Regarding claims 3 and 4, the combination of Ito et al. with Horimai et al. would show, wherein a third information subsequent to said second information is recorded on one of the land track and the groove track of said first recording layer on which said first information is not recorded, and fourth information subsequent to said third information is recorded on one of the land track and the groove track of said second recording layer on which said second information

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is not recorded (See Ito et al. col. 8, line 26 to col. 9, line 18; Figs. 1,2,3,4; "contiguous recording/reproduction of the tracks "grooves/lands")

Regarding claims 5 and 6, the combination of Ito et al. with Horimai et al. would show, wherein said first information is recorded on the land track of said first recording layer, and said second information is recorded on the land track of said second recording layer (See Ito et al. col. 8, line 26 to col. 9, line 18; Figs. 1,2,3,4; "contiguous recording/reproduction of the tracks "grooves/lands")

Regarding claims 7 and 8, the combination of Ito et al. with Horimai et al. would show, wherein said first information is recorded on the groove track of said first recording layer, and said second information is recorded on the groove track of said second recording layer (See Ito et al. col. 8, line 26 to col. 9, line 18; Figs. 1,2,3,4; "contiguous recording/reproduction of the tracks "grooves/lands")

Regarding claim 9 and 11, the combination of Ito et al. with Horimai et al. would show, wherein either of said first recording layer and said second recording layer has been divided into N zones (zone 1 to zone N) from the inner periphery toward the outer periphery of said optical recording medium (See Ito et al. col. 8, line 55 to col. 10 line 11; Figs. 1,2,3; 12; i.e. N=1, one zone); (See Horimai et al. Fig. 1, more than one zone), and

first information is recorded on one of the land track and the groove track in zone n (n: a natural number not less than one and not more than N; i.e. n=1, one zone) of said first recording

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layer in the direction from the inner periphery toward the outer periphery of said optical recording medium (See col. 10, lines 43-49; "vice versa"), (See Ito et al. col. 8, line 55 to col. 10 line 11; col. 9, line 56 to col. 10, line 11; Figs. 1,2,3,4; "information recorded from first inner circumference/periphery position to last outer circumference/periphery position, i.e. from X_{in} to X_{out} "), and

second information subsequent to said first information is recorded on one of the land track and the groove track in zone n of said second recording layer in the direction from the outer periphery toward the inner periphery of said optical recording medium (See col. 10, lines 43-49; "vice versa"), (See Ito et al. col. 8, line 55 to col. 10 line 11; col. 9, line 56 to col. 10, line 11; Figs. 1,2,3,4; "information recorded from last outer circumference/periphery position to first inner circumference/periphery position, i.e. from X'_{out} to X'_{inn} ") ("the end position of the zone n in the first layer is the start position of the second layer in the same zone n, i.e. $n = 1$)

Regarding claim 10, the combination of Ito et al. with Horimai et al. would show, wherein an outer periphery end of zone n of said second recording layer is located nearer to the outer periphery of said optical recording medium than an outer periphery end of zone n of said first recording layer (See Ito et al. Fig. 13D)

Regarding claim 12, the combination of Ito et al. with Horimai et al. would show, wherein an inner periphery end of zone n of said second recording layer is located nearer to the inner periphery of said optical recording medium than an inner periphery end of zone n of said first recording layer (See Ito et al. Fig. 1D)

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Regarding claims 13, and 14, the combination of Ito et al. with Horimai et al. would show wherein said first information is recorded on the land track in zone n of said first recording layer, and said second information is recorded on the land track in zone n of said second recording layer (See Ito et al. col. 8, line 26 to col. 9, line 18; Figs. 1,2,3,4; "contiguous recording/reproduction of the tracks "grooves/lands")

Regarding claims 15 and 16, the combination of Ito et al. with Horimai et al. would show, wherein said first information is recorded on the groove track in zone n of said first recording layer, and said second information is recorded on the groove track in zone n of said second recording layer (See Ito et al. col. 8, line 26 to col. 9, line 18; Figs. 1,2,3,4; "contiguous recording/reproduction of the tracks "grooves/lands")

Regarding claims 17, An optical recording medium having a plurality of recording layers of a double-spiral structure in which information is recorded on groove tracks (See Abstract; col. 2, lines 16-43; col. 8, lines 55-64; Figs. 1-3; 12),

wherein at least a first recording layer, a second recording layer, a third recording layer, and a fourth recording layer are provided as said recording layers (See col. 9, lines 34-45; Figs. 2,4),

spirals of said first recording layer and said third recording layer are in a forward direction, spirals of said second recording layer and said fourth recording layer are in a backward direction (See col. 9, lines 34-45; Figs. 2,4),

a first recording direction from an inner periphery toward an outer periphery of the optical recording medium and a second recording direction from the outer periphery toward the inner periphery of the optical recording medium are defined as the order of recording information (See col. 9, lines 34-45; Figs. 2,4),

the recording direction of said first recording layer and said third recording layer is one of said first recording direction and said second recording direction (See col. 9, lines 34-45; Figs. 2,4),

the recording direction of said second recording layer and said fourth recording layer is the other of said first recording direction and said second recording direction (See col. 9, lines 34-45; Figs. 2,4), and

physical addresses are allocated in the order of one of a land track and a groove track of said first recording layer, one of a land track and a groove track of said second recording layer, the other of the land track and the groove track of said first recording layer, the other of the land track and the groove track of said second recording layer, one of a land track and a groove track of said third recording layer, one of a land track and a groove track of said fourth recording layer, the other of the land track and the groove track of said third recording layer, and the other of the land track and the groove track of said fourth recording layer (See col. 9, line 35-col. 10, line 49; Figs. 2,4).

Ito et al. teaches having a double-spiral structure with lands and grooves (groove tracks with spaces between "lands"), but fails to disclose which information is recorded on both of land and groove tracks (See col. 2, lines 16-43; col. Fig. 1,13)

However, this feature is well known in the art as evidenced by Horimai et al., which discloses a format of a recording medium for increasing capacity including a double-spiral tracks in which information is recorded on both land tracks and groove tracks (See Abstract; col. 16, lines 7-15; col. 20, lines 16-43; Figs. 11,17)

It would have been obvious to one with ordinary skill in the art at the time of the invention to form a double-spiral recording information in which information is recorded on both land tracks and groove tracks, in order to increase the recording capacity and further performing a continuous tracking operation at the time of recording/reproduction of the lands tracks and/or the grooves tracks, as suggested by Horimai et al.

Regarding claim 18, apparatus claim 18 is drawn to the corresponding recording apparatus of the recording medium as claimed in claims 1,2-8 and 17. Therefore apparatus claim 18 corresponds to the recording medium claims 1,2-8 and 17, and is rejected for the same reasons of obviousness as used above.

Regarding claim 19, apparatus claim 19 is drawn to the corresponding reproducing apparatus of the recording medium as claimed in claims 1,2-8 and 17. Therefore apparatus claim 18 corresponds to the recording medium claims 1,2-8 and 17, and is rejected for the same reasons of obviousness as used above.

Regarding claim 20, apparatus claim 19 is drawn to the corresponding reproducing apparatus of the recording medium as claimed in claim 9,10,13 and 15. Therefore apparatus

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claim 20 corresponds to the recording medium claim 9, 10,13 and 15 and is rejected for the same reasons of obviousness as used above.

Regarding claim 21, apparatus claim 19 is drawn to the corresponding reproducing apparatus of the recording medium as claimed in claim 11, 12,14 and 16. Therefore apparatus claim 21 corresponds to the recording medium claims 11, 12,14 and 16 and is rejected for the same reasons of obviousness as used above

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a. U.S. Patent No. 6,424,614 to Kawamura et al., which discloses an optical recording medium having a plurality of recording layers of a spiral structure in which information is recorded on tracks, and information is recorded in the recording layers in one of first recording direction and second recording direction.
- b. U.S. Patent No. 6,134,196 to Sato et al., which discloses a reproducing apparatus for a recording medium having a plurality of recording layers of a spiral structure in which information is recorded on tracks, and information is recorded in the recording layers in one of first recording direction and second recording direction.
- c. U.S. Patent No. 5,754,508 to Hosoda et al., which discloses a recording medium with two surfaces divided into zones and zones of the first recording surface and the second surface are grouped.

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d. U.S. Patent No. 6,370,091 to Kuroda, which discloses an optical recording medium having a plurality of recording layers of structure in which information is recorded on tracks, and information is recorded in the recording layers in one of first recording direction and second recording direction and recording/reproducing apparatus of the same.

e. U.S. Patent No. 5,995,458 to Itoi, which discloses a recording medium having a land and groove areas arranged in double-spiral configuration, wherein either the land area or the groove area is scanned is continuously scanned.

Conclusion

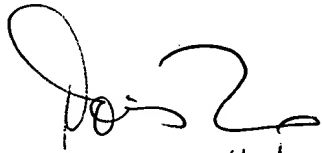
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jorge L Ortiz-Criado whose telephone number is (703) 305-8323. The examiner can normally be reached on Mon.-Thu.(8:30 am - 6:00 pm), Alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Doris H To can be reached on (703) 305-4827. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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DORIS H. TO 4/2/04
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600